

**U.S. DEPARTMENT OF ENERGY  
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT  
OFFICE OF QUALITY ASSURANCE**

**AUDIT REPORT LANL-ARC-00-14**

**OF THE**

**CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM  
MANAGEMENT AND OPERATING CONTRACTOR**

**AT**

**LOS ALAMOS NATIONAL LABORATORY**

**LOS ALAMOS, NEW MEXICO**

**SEPTEMBER 26 – 28, 2000**

**Prepared by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

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**Approved by:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Robert W. Clark  
Director  
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## **1.0 EXECUTIVE SUMMARY**

As a result of Quality Assurance (QA) Audit LANL-ARC-00-14, the audit team determined that the Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O) at Los Alamos National Laboratory (LANL) is satisfactorily implementing the Office of Civilian Radioactive Waste Management (OCRWM) QA Program in accordance with the U.S. Department of Energy (DOE) OCRWM Quality Assurance Requirements and Description (QARD), DOE/RW-0333P, Revision 10, OCRWM procedures and LANL implementing procedures.

QA Program elements 1.0, 2.0, 5.0, 6.0, 12.0, 15.0, 16.0 and 17.0; Supplements I, II, III and V; and Appendix C were determined to be effectively implemented based on the activities evaluated during the audit. Elements 3.0, 4.0, 7.0, 8.0, 9.0, 10.0, 11.0, 13.0, 14.0, 18.0, Supplement IV, and Appendices A and B are currently not implemented by LANL.

The audit team identified conditions adverse to quality that were addressed in two Deficiency Reports (DR) LANL-01-D-006 and LVMO-00-D-150. It should be noted that for DR LVMO-00-D-150 some deficient issues identified at LANL were combined with similar issues discovered during audit M&O-ARP-00-07 of the Disruptive Events Process Model Report.

DR LANL-01-D-006 addresses LANL's failure to control calibration of Measuring and Test Equipment (M&TE), translate direction established in a Memorandum into an applicable procedure, and implement corrective actions as defined in a previously closed DR.

DR LVMO-00-D-150 addresses that project staff are not included in or aware of their required training, and interpretation of 'Manager' is not consistently applied as related to training of assigned project personnel. Personnel Position Descriptions, including minimum education and experience requirements, are inadequate for staff positions.

In addition, there was one recommendation resulting from the audit as documented in Section 6.0 of this report.

The audit team determined that no new deficiency documents were issued during the last compliance-based audit, LANL-ARC-99-05. Of the deficiency documents issued to LANL since the last audit, DR LANL-99-D-020 was voided; DR LANL-00-D-033 was superseded and reissued to another organization for response; and DR LANL-99-D-074 concerned "Q" procurements which LANL no longer has responsibility for performing. Therefore, follow-up of previously identified deficiencies was not required.

## 2.0 SCOPE

Auditors representing the DOE Office of Quality Assurance (OQA) conducted a compliance audit to evaluate LANL's implementation of the OCRWM QA Program as described in the QARD and applicable implementing procedures at the LANL facilities. The audit team, through interviews of cognizant personnel, reviews of documentation, and evaluation of procedures, assessed implementation, adequacy, and effectiveness of LANL's implementation of the QA Program.

The audit team did not evaluate LANL activities that supported the Analysis & Model Reports (AMR) and Process Model Reports (PMR) which had already been evaluated during performance-based audits such as M&O-ARP-99-09 and M&O-ARP-00-05.

The audit team reviewed the status of open and closed OCRWM deficiency documents generated during previous OQA audits and surveillances of LANL to determine the effectiveness of completed corrective actions.

In accordance with the approved audit plan, the following QA Program elements were evaluated:

### **QA PROGRAM ELEMENTS**

1.0	Organization
2.0	QA Program
5.0	Implementing Documents
6.0	Document Control
12.0	Control of M&TE
15.0	Nonconformances
16.0	Corrective Action
17.0	QA Records
Supplement I	Software (Limited to software identified during review of scientific notebooks.)
Supplement II	Sample Control
Supplement III	Scientific Investigation (Limited to review of new scientific notebooks.)
Supplement V	Control of the Electronic Management of Data (Limited to LANL activities not related to AMR/PMR processes.)
Appendix C	Monitored Geologic Repository (Limited to expert elicitation.)

The following QA Program elements were not evaluated, since LANL is not currently implementing them:

3.0	Design Control
4.0	Procurement Document Control
7.0	Control of Purchased Items and Services

8.0	Identification and Control of Items
9.0	Control of Special Processes
10.0	Inspection
11.0	Test Control
13.0	Handling, Storage, and Shipping
14.0	Inspection, Test and Operating Status
18.0	Audits
Supplement IV	Field Surveying
Appendix A	High-Level Waste Form Production
Appendix B	Storage and Transportation

### 3.0 AUDIT TEAM

The following is a list of audit team members and their assigned areas of responsibility:

<u>Name/Title/Organization</u>	<u>QA Program Element</u>
William J. Glasser, Audit Team Leader, OQA/Quality Assurance Technical Support Services (QATSS)	1.0, 2.0, 12.0, and 17.0
James V. Voigt, Auditor, OQA/QATSS	5.0, 6.0, Supplements I and III
James Blaylock, Auditor, DOE/OQA	Supplements II, III and V, 15.0, 16.0, and Appendix C

### 4.0 AUDIT TEAM MEETINGS

A pre-audit meeting was held at LANL on September 26, 2000. Daily debriefings were held to apprise LANL management and staff of the progress of the audit and any conditions adverse to quality. A post-audit meeting was held at LANL on September 28, 2000. Personnel contacted during the audit, including those who attended the pre-audit and post-audit meetings, are listed in Attachment 1, "Personnel Contacted During the Audit."

### 5.0 SUMMARY OF AUDIT RESULTS

#### 5.1 Program Effectiveness

The audit team concluded that, overall, LANL's implementation of the QA Program is adequate and effective. The results for each QA Program element evaluated are contained in Attachment 2, "Summary Table of Audit Results."

## **5.2 Stop Work or Immediate Corrective Actions Taken**

There were no Stop Work Orders or immediate corrective actions as a result of the audit.

## **5.3 QA Program Implementation**

Attachment 2, "Summary Table of Audit Results," provides results for each QA Program element audited. The details of the audit, including the objective evidence reviewed, are documented in the audit checklists. The checklists are maintained as QA records.

## **5.4 Technical Audit Activities**

There were no technical areas evaluated during this audit.

## **5.5 Summary of Conditions Adverse to Quality**

DR LANL-01-D-006 was issued with conditions adverse to quality as a result of this audit. The additional identified deficient conditions have been combined with DR LVMO-00-D-150, which is to be issued to the OCRWM M&O, to document similar conditions adverse to quality identified during several recent audits. Details of these DRs are documented in Section 5.5.2 of this report.

### **5.5.1 Corrective Action Request (CAR)**

None.

### **5.5.2 Deficiency Reports (DR)**

#### **LANL-01-D-006**

LANL failed to control M&TE as required by Yucca Mountain Site Characterization Project Administrative Procedure (YAP)-12.3Q, Revision 0, ICN 1\*, "Control of Measuring and Test Equipment and Calibration Standards."

- a) Calibration certificates did not identify calibration standards providing NIST traceability; have a clear statement of acceptability;

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\* NOTE: Administrative Procedure AP-12.1Q, Revision 0, ICN 0, "Control of Measuring and Test Equipment and Calibration Standards," was effective two weeks prior to beginning the LANL audit. Because the superseded procedure (YAP-12.3Q) was in effect over a majority of the period to be audited, it was selected as the controlling reference requirement.

have a defined range of tolerances; discuss if the tolerances were met; and have consistency between the specified calibration tolerances and the documented tolerances as found in the calibration certificate.

- b) LANL failed to translate requirements established in a Memorandum into an applicable procedure; consequently, Statements of Technical and Quality Requirements for Calibration Services were not being properly processed. In addition, the OQA/QATSS on-site representative at LANL did not review the Calibration Service Request for appropriate quality requirements.
- c) Implementation of corrective action identified in previously closed DR YM-97-D-074 was not effective. Corrective actions that were defined for item b) above were put into action by issuing a memorandum. However, this memorandum was not effectively implemented or defined in an implementing procedure.

#### DR LVMO-00-D-150

DR LVMO-00-D-150 was initiated during audit M&O-ARP-00-07. Deficient conditions identified during the LANL audit were combined with this DR prior to issuance; therefore, a Deficiency Identification and Referral was not generated.

DR LVMO-00-D-150 in part addresses LANL's failure to ensure that all project staff are included in and are aware of their specific assigned training, and the interpretation of 'Manager' is not consistently applied as it relates to assigning project personnel training as defined in Administrative Procedure (AP)-2.1Q, Revision 1, ICN 0, "Indoctrination and Training of Personnel."

DR LVMO-00-D-150 addresses in part LANL's failure to ensure that Staff Position Descriptions, including minimum education and experience requirements, are established and are adequate for occupied project positions as defined in Administrative Procedure AP-2.2Q, Revision 0, ICN 0, "Establishment and Verification of Required Education and Experience of Personnel."

#### **5.5.3 Deficiencies Corrected During the Audit (CDA)**

None.

#### **5.5.4 Follow-up of Previously Issued Deficiency Documents**

Three deficiency documents were issued to LANL in the past year. DR LANL-99-D-020 was voided; DR LANL-00-D-033 was superseded and reissued to another organization for response; and DR LANL-99-D-074 concerned “Q” procurements which LANL no longer has responsibility in performing. Consequently, no follow-up of previously identified deficiencies was considered necessary.

### **6.0 RECOMMENDATION**

The following recommendation resulted from the audit and is presented for LANL management consideration:

Upon issuance of scientific notebooks to technical staff new to the project, scientific notebook compliance reviews should be performed more frequently than annually. The audit team suggests that newly assigned scientific notebooks be reviewed quarterly or even monthly so that potential errors in the use of the scientific notebooks may be discovered and corrected early in their development.

### **7.0 LIST OF ATTACHMENTS**

Attachment 1: Personnel Contacted During the Audit

Attachment 2: Summary Table of Audit Results

## ATTACHMENT I

### PERSONNEL CONTACTED DURING THE AUDIT

<b>Name</b>	<b>Organization/Title</b>	<b>Pre-Audit Meeting</b>	<b>Contacted During Audit</b>	<b>Post-Audit Meeting</b>
Buenviaje, L. A.	SAIC, OQA/QATSS, LANL On-Site Representative	X		X
Dash, Z. V.	LANL, Technical Staff		X	
Dixon, P. R.	LANL, Laboratory Lead	X	X	X
Gray, E. A.	LANL, Records/Training/Document Control Coordinator	X	X	X
Gundlach, B. D.	LANL, Software Configuration Lead	X	X	X
Levy, S. S.	LANL, Tech Coordinator	X	X	X
Martinez, Cleoves	LANL, Technical Activity Lead	X	X	X
Melton, Michelle	LANL, Human Resources Team Lead		X	
Sullivan, E. (Jeri)	LANL, Laboratory Technician		X	
Young, Jim	LANL, Technical Activity Lead	X	X	X
Younker, J. L.	M&O, Director, Applied Research & Testing Division			X*
Wolfsberg, Laura	LANL, Principle Investigator		X	
Zyvoloski, G. A.	LANL, Technical Staff		X	

\* VIA Teleconference



## ATTACHMENT 2

### SUMMARY OF AUDIT RESULTS

QA Element/ Activities	Document Review	Reference to Checklist Pages	Deficiencies	Recommendation	Program Adequacy	Procedure Compliance	Over- all
1.0	LANL-YMP-QP-01.4, R5 LANL-YMP-QP-01.3, R5	Pgs. 1 – 3 Pgs. 4-5			SAT NI	SAT NI	SAT
2.0	LANL-YMP-QP-02.12, R3 AP-2.1Q, R1, ICN 0 AP-2.2Q, R0, ICN 0	Pg. 6 Pgs. 7-8 Pgs. 9-10	DR (1) DR (1)		NI SAT SAT	NI UNSAT UNSAT	SAT
5.0	AP-5.2Q, R0, ICN 0	Pgs. 11-12	DR (2)		SAT	SAT	SAT
6.0	LANL-YMP-QP-06.1, R0 LANL-YMP-QP-06.2, R9 LANL-YMP-QP-06.3, R9	Pgs. 13-16 Pgs. 17-18 Pgs. 19-20			SAT SAT SAT	SAT SAT SAT	SAT
12.0	YAP-12.3Q, R0, ICN1	Pgs. 21-29	DR (2)		SAT	UNSAT	SAT
15.0	YAP-15.1Q, R4	Pg. 30			SAT	NI	SAT
16.0	AP-16.1Q, R4, ICN1	Pg. 31	DR (2)		SAT	SAT	SAT
17.0	AP-17.1Q, R1, ICN2	Pgs. 32-35			SAT	SAT	SAT
SUPP I	AP-SI.1Q, R 2, ICN 4	Pgs. 36-53			SAT	SAT	SAT
SUPP II	LANL-YMP-QP-08.1,R 6	Pgs. 54-56			SAT	SAT	SAT
SUPP III	AP-SIII.1Q, R 0, ICN 0	Pgs. 57-68		REC #1	SAT	SAT	SAT
SUPP V	AP-SV.1Q, R0, ICN 2 LANL-YMP-QP-S5.01, R0	Pgs. 69-70 Pgs. 71-72			SAT SAT	SAT SAT	SAT
APP. C	AP-AC.1Q, R0, ICN0	Pg. 73			SAT	NI	SAT
TOTAL	PAGES = 73		2 DRs	1 REC	SATISFACTORY		

Legend:

SAT Satisfactory

DR Deficiency Report

NI Not Implemented

DR (1) = LVMO-00-D-150

DR (2) = LANL-01-D-006

UNSAT

Unsatisfactory

REC

Recommendations